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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/929,426	08/13/2001	Stephen F. Gass	SDT 301	9667
27630	7590	06/17/2004	EXAMINER	
SD3, LLC 22409 S.W. NEWLAND ROAD WILSONVILLE, OR 97070			DRUAN, THOMAS J	
			ART UNIT	PAPER NUMBER
			3724	
DATE MAILED: 06/17/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/929,426

**Applicant(s)**

GASS ET AL.

**Examiner**

Thomas J. Druan, Jr.

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2004.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.  
4a) Of the above claim(s) 9-25 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1, 2 and 4-8 is/are rejected.  
7) ☒ Claim(s) 3 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date see Other.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☒ Other: See Continuation Sheet.

Continuation of Attachment(s) 6). Other: first 8 IDS's filed prior to this mailing.

3/15/03

8/10/03

8/21/03

11/16/03

2/9/04

3/10/04

4/17/04

4/29/04

### DETAILED ACTION

1. This action is in response to Applicant's amendment received on 11 March 2004.

#### ***Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claim 1 is provisionally rejected under the judicially created doctrine of double patenting over claim 18 of copending Application No. 10/292,607. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: a cutting tool with a contact detection means that detects contact with a human and the cutting blade and with another material and the cutting blade, and upon contact with a human, a reaction

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system causes a predetermined action to take place, and therefore claim 1 is anticipated by Claim 18 of copending Application No. 10/292,607.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2, 4, 5 & 7 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,942,975 to Sørensen.

Sørensen discloses the invention as claimed including a woodworking machine comprising: a conductive cutter 4 adapted to cut a workpiece; a motor adapted to drive the cutter (inherent); a contact detection system 9 electrically coupled to the cutter to impart an electrical signal thereto, where the electrical signal has at least one property, and where the at least one property, the voltage amplitude of the electrical signal (column 3, lines 28-43), is changed when a person contacts the cutter (column 4, lines 48-52), and where the contact detection system is adapted to distinguish contact between the cutter and the person from at least one other event generating a comparable amount of change in the at least one property based on at least one change in the at least one property that occurs in less than one hundred microseconds (column 5, lines 63-64); and a reaction system 11 adapted to cause a predetermined action to take place upon detection of contact between the person and the cutter by the

contact detection system, where the predetermined action includes stopping movement of the cutter (column 5, lines 24-25).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sørensen.

Sørensen discloses the invention as claimed, but does not specify a contact detection system is adapted to identify contact between a person and the cutter as a reduction in the voltage amplitude of the signal on the cutter of at least 5% within 100 microseconds. Instead, Sørensen detects an increase in voltage amplitude as the system detects an increase in the capacitance of the cutter (column 9, lines 10-36). It would have been obvious to one skilled in the art to detect a decrease in the signal on the cutter if the circuit were wired to create a decrease in the signal on the cutter of at least 5% within 100 microseconds rather than an increase so that less power would be used.

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sørensen in view of US 6,366,099 to Reddi.

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Sørensen discloses the invention substantially as claimed, but does not disclose that the one other event is contact between a cutter and green wood. Reddi teaches that capacitance measuring circuits are used for detecting a human hand (column 3, line 15) as well as for detecting the moisture content of wood (column 3, line 23), and since the device of Sørensen is used as a woodworking machine that detects contact between a human and the cutter, it would have been obvious to one skilled in the art to set the sensitivity of the device of Sørensen to be able to distinguish between an event when green wood contacts the cutter from an event where a human touches the cutter in order to prevent misfiring of the braking system.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sørensen in view of US 3,858,095 to Friemann et al. (hereinafter Friemann).

Sørensen discloses the invention substantially as claimed, but lacks a reaction system that can stop movement of the cutter blade within 10 milliseconds. Friemann teaches the use of a braking system for a saw blade where the reaction system is configured to stop movement of the cutter within 10 milliseconds after contact between the cutter and the person (column 4, lines 5-6). It would have been obvious to one skilled in the art at the time of the invention to use the reaction system of Friemann with the device of Sørensen in order to increase the effectiveness of the reaction system.

***Allowable Subject Matter***

8. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

9. Applicant's arguments filed 11 March 2004 have been fully considered but they are not persuasive. Applicant argues that Sørensen does not disclose a contact detection system "adapted to distinguish contact between the cutter and the person from at least one other event generating a comparable amount of change in the at least one property," and further that Sørensen cannot distinguish the contact based on the time during which the change in the property occurs. Applicant goes on to argue that the combination of Sørensen in view of Reddi would not misfire if green wood contacts the cutter. Applicant contends that Friemann is unable to stop a band saw in less than 10 milliseconds. Applicant also contends that the Obviousness-Type Double Patenting rejection should be withdrawn because the instant invention and claim 18 of copending application 10/292,607 rely on "different factors, namely, time and frequency."

Applicant's remarks are well taken; however, it is the examiner's position that the references make obvious the claimed invention. Sørensen discloses a device for sensing the distance between a person and a cutter based on a changing signal. The property that is being monitored is a signal based on the distance, including zero (i.e. contact), between a person and the cutter. The amount of change that is detected is



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based on an alternating voltage which has a period (i.e. an amount of time). Thus it can be said that the resolution of the system is based on that period. The device triggers a reaction system when a predetermined voltage amplitude is reached (column 3, lines 28-43). So if a person is one inch away and moves one half an inch towards the cutter the signal will change by some amount, and when the person moves another half an inch towards the cutter, thereby contacting the blade, the event will generate a comparable amount of change, but will be distinguished from the first event in that the voltage amplitude will have reached a predetermined value signaling contact. The property that is changing is the alternating voltage, which has a frequency defined as the change in the value of the voltage amplitude per unit time. Therefore, Sørensen discloses a contact detection system that distinguishes between events generating a comparable amount of change in a property that is based on time during which a change in the property occurs. The preferred frequency is disclosed as 10Hz–200kHz (column 5, lines 63-64), which means that the amplitude can be checked between 20 times per second to 400,000 times per second (amplitude can be checked twice per wavelength). This translates into a maximum of once every  $2.5 \times 10^{-6}$  seconds, which is less than one hundred microseconds ( $10^{-5}$  seconds).

Regarding Sorensen in view of Reddi, setting the sensitivity to not fire when contacting green wood makes sense because there is no safety concern when cutting green wood as opposed to when the blade contacts a person. If the sensitivity were set to detect green wood, which has been identified as having properties comparable to a person, then the reaction system would fire at an inappropriate time (i.e. it would

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misfire). Being able to distinguish between two events does not mean that the events must happen at a single sensitivity level. At one level, contact with green wood will trigger the reaction system, and at another it will contact with a person will trigger the reaction system, and the two different setting would be comparable to some degree. Therefore, it remains that the device of Sorensen in view of Reddi should be able to distinguish between the two events.

Regarding Friemann's ability to stop a band saw blade in less than 10 milliseconds, the examiner points to column 2, lines 15-22 of Friemann. It states that "Experiments have shown that with a protective circuit arrangement in accordance with the invention it is possible for a band cutter to be stopped in about 1/200th second." This statement is claimed to based on strong evidence in that experiments have been run to test the stopping time of the band saw whereas Applicant is merely guessing a possible stopping time for a band saw based on hypothetical specifications of a braking system which may or may not be fully understood. Thus, there is no reason to doubt the findings of the experiments of Friemann in light of the hypothetical braking power of an assumed system, and it remains that Friemann aptly teaches the desire and ability to stop a cutter in less than 10 milliseconds.

Regarding the Obviousness-Type Double Patenting rejection, the examiner submits that time and frequency as they are applied in their respective inventions are analogous. Specifically, the instant invention relies on a certain change occurring during some unit of time, which would have units involving 1/s (where "s" is seconds).

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Similarly, frequency is defined in terms of units as 1/s. Therefore, the Double Patenting rejection remains applicable.

### ***Conclusion***

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas J. Druan, Jr. whose telephone number is 703-308-4200. The examiner can normally be reached on M-F (8:30-6:00) First Friday Off.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Allan N. Shoap can be reached on 703-308-1082. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
tjd

June 14, 2004

  
Allan N. Shoap  
Supervisory Patent Examiner  
Group 3700